

Incremental Architecture-Based Re-engineering of a Legacy Application

This paper describes a process for incrementally re-engineering a legacy application whose architecture has degraded over time. Specifically, the goal was to develop a target architecture for the system and then re-engineer the system to the desired architecture using the following steps:

- Identify the source architecture
- Identify a target architecture
- Analyze the original program
- Restructure the original program
- Re-engineer the original program (to ArchJava)
- Periodically check against the target architecture

"ArchJava is an extension to Java that seamlessly unifies software architecture with implementation, using a type system to ensure that the implementation conforms to architectural constraints" (<http://archjava.fluid.cs.cmu.edu>). The above steps were done iteratively until the desired architecture was achieved.

Re-engineering ISVis will most likely produce the architecture erosion this paper talks about since there is no clearly defined documentation on the design of the system. Since there is no architectural documentation, any changes made to the code will most likely not be in line with the original author's thinking.